

CLAIMS

What is claimed is:

1. An electrosurgical instrument for transecting an organ, comprising:
 - an introducer having a distal end, a proximal end, and a channel therein extending to an opening at the distal end;
a conductive wire slidably receivable within the channel and movable between an undeployed position wherein the conductive wire is substantially positioned within the channel and a deployed position wherein a portion of the conductive wire is deployed from and positioned outside of the introducer, wherein in the deployed position said portion of the conductive wire has a substantially looped configuration;
a deployment device movably coupled to the introducer and movable between a first position and a second position, the deployment device being engaged with the conductive wire such that movement of the deployment device between the first and second positions causes the conductive wire to move between the undeployed and deployed positions;
a capture element at a distal end of the introducer for securing the distal end of the conductive wire to the introducer when the conductive wire is in the deployed position,
wherein, when the conductive wire is in the deployed position and when the distal end of the conductive wire is secured to the introducer by the capture element, the deployment device is movable toward the first position to thereby cinch the conductive wire substantially without moving the introducer.
2. The electrosurgical instrument according to claim 1, wherein the electrosurgical instrument is a bipolar instrument and the introducer further includes a conductive portion, and wherein the conductive wire is an active electrode and the conductive portion of the introducer is a return electrode.

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3. The electrosurgical instrument according to claim 2, further comprising a bipolar generator having a first pole electrically coupled to the active electrode and a second pole electrically coupled to the return electrode.

5 5. The electrosurgical instrument according to claim 1, wherein the conductive wire is made from a shape memory alloy.

6. The electrosurgical instrument according to claim 5, wherein the conductive wire is further comprised of nitinol.

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7. The electrosurgical instrument according to claim 1, wherein the conductive wire is comprised of a spring steel.

8. The electrosurgical instrument according to claim 1, wherein the capture
15 element is movable between an open position and a closed position, the instrument further comprising a capture element actuator coupled with the capture element and movably coupled with the introducer, the capture element actuator being movable between first and second positions wherein such moving causes the capture element to move between the closed and open positions respectively.

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9. The electrosurgical instrument according to claim 8, wherein the actuator element pivots about a pivot point to move between the open and closed positions.

10. The electrosurgical instrument according to claim 9, wherein the distal end of
25 the introducer further comprises a recess therein positioned relative to the capture element so that the capture element extends over the recess when in the closed position.

11. The electrosurgical instrument according to claim 10, wherein when the distal end of the conductive wire is secured to the introducer by the capture element, it is positioned within the groove.

5 12. The electrosurgical instrument according to claim 1, wherein the introducer has a groove therein along a portion of its length, and wherein the deployment device is slidably positioned within said groove.

10 13. The electrosurgical instrument according to claim 1, wherein the introducer further comprises shaft extension portion having a first diameter and a handle portion adjacent the shaft extension portion having a second diameter greater than the first diameter, and wherein the channel extends through the shaft extension portion and into the handle portion.

15 14. The electrosurgical instrument according to claim 1, wherein the conductive wire further comprises a protrusion at the distal end.

20 15. A bipolar electrosurgical instrument for transecting an organ, comprising:
an introducer having a distal end, a proximal end, and a channel therein
extending to an opening at the distal end, the introducer having a conductive portion forming a return electrode;

25 a conductive wire comprised of a shape memory alloy slidably receivable within the channel and movable between an undeployed position wherein the conductive wire is substantially positioned within the channel and a deployed position wherein a portion of the conductive wire is deployed from and positioned outside of the introducer, wherein in the deployed position said portion of the conductive wire has a substantially looped configuration, the conductive wire forming an active electrode;

30 a deployment device movably coupled to the introducer and movable between a first position and a second position, the deployment device being

engaged with the conductive wire such that movement of the deployment device between the first to second positions causes the conductive wire to move between the undeployed and deployed positions respectively;

5 a capture element at a distal end of the introducer for securing the distal end of the conductive wire to the introducer when the conductive wire is in the deployed position,

wherein, when the conductive wire is in the deployed position and when the distal end of the conductive wire is secured to the introducer by the capture element, the deployment device is movable toward the first position to thereby cinch
10 the conductive wire substantially without moving the introducer.

16. The electrosurgical instrument according to claim 15, further comprising a bipolar generator having a first pole electrically coupled to the active electrode and as second pole electrically coupled to the return electrode.

15 17. The electrosurgical instrument according to claim 15, wherein the capture element is movable between open and closed positions, the instrument further comprising a capture element actuator coupled with the capture element and movably coupled with the introducer, the capture element actuator being movable
20 between first and second positions wherein moving between the first and second positions causes the capture element to move between the closed to open positions respectively.

18. The electrosurgical instrument according to claim 17, wherein the distal end
25 of the introducer further comprises a recess therein positioned relative to the capture element so that the capture element extends over the recess when in the closed position, and wherein when the distal end of the conductive wire is secured to the introducer by the capture element, it is positioned within the recess.

30 19. A method for electrosurgically transecting an organ, comprising:

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providing an introducer having a proximal end, a distal end, and a channel therein extending to an opening at the distal end of the introducer, a conductive wire slidably receivable within the channel, a deployment device engaged with the conductive wire and movably coupled to the introducer and movable between first and second positions, wherein movement between the first and second positions moves the conductive wire between an undeployed position wherein the conductive wire is substantially positioned within the channel and a deployed position wherein a portion of the conductive wire is deployed from and positioned outside of the introducer and has a substantially looped configuration, the introducer further having a capture element at a distal end for securing a distal end of the electro-surgical wire to the introducer,

with the conductive wire in the undeployed position, moving the distal end of the introducer adjacent a target organ to be transected;

moving the deployment device from the first to second positions to thereby move the conductive wire to the deployed position;

using the capture element to secure a distal end of the conductive wire to the introducer;

applying radio frequency energy to the conductive wire; and

moving the deployment device toward the first position to cinch the organ and thereby transect it.

20. The method according to claim 19, wherein the deployment device is moved from the second toward the first position substantially without moving the introducer.

21. The method according to claim 19, wherein the electro-surgical instrument is a bipolar electro-surgical instrument and the electro-surgical wire is an active electrode, the instrument further comprising a return electrode associated with the introducer.